



## The Culture of Connectivity: A Critical History of Social Media

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# Wikipedia and the Neutrality Principle

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## Abstract and Keywords

Chapter 7 traces the history of Wikipedia, which started out as a collaborative project in 2001 to grow into a professionally run, volunteer-based, non-profit organization whose goal is the online production of an encyclopedia. Wikipedia is one of the few examples of nonmarket peer-production in an overwhelmingly corporate ecosystem. Over the years, content contribution to Wikipedia has gradually become a protocolled interaction of human editors and bots steered by the platform's hierarchical content management system. A complex procedure of negotiation, based on five basic principles—of which neutrality is the most important one—necessarily results in consensual entries. The neutrality principle is also mirrored in Wikipedia's nonprofit organization: the encyclopedic project is separate from the Wikimedia Foundation that secures its funding and operating power. But can a nonprofit enclave of neutrality exist when it is woven into the corporate fabric of connective media? And how does Wikipedia's neutrality principle relate to the sharing logic and popularity rankings fostered by Facebook and Google?

*Keywords:* Wikipedia, content management, nonprofit peer-production, online knowledge construction, collaborative co-creation

## 7.1. Introduction

Wikipedia is an online encyclopedia. It incorporates elements of general and specialized encyclopedias, almanacs, and gazettes. Wikipedia is *not* a soapbox, an advertising platform, a vanity press, an experiment in anarchy or democracy, an indiscriminate collection of information, or a web directory. It is *not* a dictionary, newspaper, or a collection of source

documents; that kind of content should be contributed instead to the Wikimedia sister projects.<sup>1</sup>

This 2012 definition of what Wikipedia is, and especially what it is *not*, forms the first of five principles on which the platform is founded. A far cry from its original description in 2001 as “the free encyclopedia that anyone can edit,” Wikipedia has shifted from being a collaborative project experimenting with the online production of encyclopedic knowledge, to being a professionally run, volunteer-based, nonprofit organization whose goal is the online production of an encyclopedia. During the intermittent decade, Wikipedia has become the world’s sixth-largest platform; with nearly 15 million registered users and contributors, it is unprecedented in scale and scope, covering almost 3.7 million articles on different subjects and still growing.<sup>2</sup> The platform’s success has stunned a global community of Internet specialists, policymakers, and business people alike. In 2011, the online encyclopedia was nominated for the UNESCO World Heritage List, underscoring its status as a global cultural phenomenon.<sup>3</sup> To many, Wikipedia is one of the few examples of what Yochai Benkler (2006: 5) has called “nonmarket peer-production” in an otherwise overwhelmingly corporate digital environment.

**(p.133)** So how did Wikipedia evolve as a unique peer-produced microsystem, and what makes it different from commercially run platforms? The online project is still regarded as the epitome of crowdsourcing: made by users, for users. Thousands of volunteers have contributed millions of entries and edits. But rather than being an open and serendipitous stream, content contribution to Wikipedia has gradually become a process strictly managed by humans and machines. A complex procedure of negotiation based on five basic principles, of which neutrality is the most important one, this process necessarily results in consensus. In contrast to its commercial counterparts, Wikipedia shapes online sociality not by implementing buttons for liking, friending, following, and trending—functions anchored in the popularity principle—but by constructing a platform for “knowing” that is moored in the neutrality principle. This ideology is mirrored in Wikipedia’s nonprofit organization. Once cheered for its anarchic structure—the embodiment of a free and open (source) information society—the platform’s nonprofit status was consolidated through the establishment of the Wikimedia Foundation, to guarantee a steady flow of funding and continue large-scale operating power without impacting the encyclopedia’s content or editorial decisions.

Over the first ten years of its existence, many have acclaimed Wikipedia’s laudable goals and successful nonprofit organization, but some also criticized its gradual institutionalization. As Wikipedia’s short history in this chapter divulges, the platform’s active user base of volunteers and amateurs has been cheered for its generous contributions and slammed for its lack of expertise. Wikipedia’s technological architecture was praised for its transparency, but its interface has

been denounced for obliterating nuances and silencing dissent. The encyclopedia's content has been subject to heated debates about accuracy, yet it survived several tests comparing its quality to established encyclopedias. Wikipedia's governance structure and policies have been praised as the reinvention of democracy in a Web 2.0 environment but have also been interpreted as indicators of autocracy and bureaucracy. In sum, what defines the encyclopedia's success for some people embodies disenchantment for others.

Wikipedia's status as the biggest nonmarket, peer-produced platform in the ecosystem of connective media raises important questions about its viability and independence in an online environment that is dominated by commercial mechanisms and principles, even if they are often cached in the rhetoric of commonality and public values. For instance, how does Wikipedia's consensual apparatus relate to the ideology of sharing, as professed by Facebook and others? How does the platform's ideology of neutrality compare to the logic of popularity ingrained in Google's ranking **(p.134)** mechanisms? And how can Wikipedia hold up its nonprofit status in a network of media conglomerates that are overwhelmingly driven by the profit motive? To answer these questions, we will have to gauge Wikipedia's efficacy in the context of a normative culture of connectivity.

### 7.2. The Techno-cultural Construction of Consensus

#### Users and Usage

From the very onset of the project in 2001, Wikipedia has been primarily described in terms of the masses of people involved in its production. The ideal-turned-platitude "wisdom of crowds" (Surowiecki 2004) kept haunting the project long after it had taken the road of systematized professionalization. Over the years, the wiki platform has been heralded as an example of "many minds collaborating" (Sunstein 2006) "distributed collaboration" (Shirky 2008), "mass collaboration" (Tapscott and Williams 2006), "crowdsourcing," and "collaborative knowledge," to name just a few such qualifications.<sup>4</sup> Wikipedia enthusiasts used these terms to praise the project's democratizing potential as well as its ethos of community and collaboration, and of course, to underline its laudable goal: providing a source of knowledge free for everyone to read and write.<sup>5</sup> But summarizing these ideals in the single "wisdom of crowds" epithet is reductive and fallacious; even the platform's founders repudiated the notion of crowds producing Wikipedia. If we pay closer attention to the platform's history, we can notice an interesting curve reflecting shifts in usage and user engagement.

What characterized Wikipedia's users in the first and second stage of development? Were they many or few, experts or amateurs, active contributors or passive readers of encyclopedic entries? During the first five years of the platform's existence, content production was largely dependent on the work of a small group of dedicated volunteers. Although they soon formed a thriving

community, the notion of a massive collective of contributors simply did not apply. Until 2006, Wikipedia was largely written and maintained by a core of dedicated editors—2 percent doing 73 percent of all edits.<sup>6</sup> Wikipedia is not alone in this respect: the same disproportionate contributions of small groups of users vis-à-vis common users can be found in the early stages of virtually all UGC platforms, as well as in the open-source movement (Ghosh and Prakash 2000).<sup>7</sup> It would be a mistake, though, to dismiss the idea of Wikipedia's many contributors as a complete myth; actually, the real wisdom of Wikipedia can be found not in its crowds but in its crowd *management*.

**(p.135)** Starting in 2006, the online encyclopedia showed a distinct decline of “elite” users while at the same time the number of edits made by novice users surged. Various researchers noted this dramatic shift in workload, but instead of endorsing the wisdom-of-crowds cliché, Kittur and colleagues (2007) researched “the rise of the bourgeoisie”: a marked growth in the population of low-edit users. After a period of hegemony by a small group of high-powered, dedicated volunteers, the “pioneers were dwarfed by the influx of settlers” (Kittur et al. 2007, n.p.). In response, the early adopters selected and refined their technological managerial systems to discipline the growing majority of novice users, who soon became the primary contributors as the number of elite users relatively decreased. Kittur and his colleagues observe a similar development in other Web 2.0 platforms, and explain this shift by describing Wikipedia in terms of a dynamic social system that evolves as a result of the gradual development, implementation, and distribution of a content management system. They suggest that what happened to Wikipedia may be a common phenomenon in the evolution of online collaborative knowledge systems.

Alongside the question whether few or many produce Wikipedia, a parallel debate revolved around whether experts or amateurs should produce online encyclopedias. The idea of thousands of lay contributors runs counter to the professional expert approach, an approach vehemently defended by the publishing industries as well as by a few cultural theorists.<sup>8</sup> Interestingly, Wikipedia originally intended to be an expert-generated encyclopedia. Starting under the name Nupedia, a small team of selected academics was invited to write entries with the aim of creating a “free online encyclopedia of high quality” made available with an open-content license (Shirky 2008: 109). Founder Jimmy Wales and his staff employee Larry Sanger put into place a protocol based on academic peer-review and grounded in the principles of openness and objectivism.<sup>9</sup> This expert approach failed, though, partly because of the slowness of scholars invited to serve as editors. To speed up the process, Sanger suggested a “wiki” as a collective place where scholars and interested laypeople from all over the globe could help with drafting and editing articles. The ensuing success of Wikipedia and the commitment of the Wikipedians took the founders by surprise. They made a great effort to keep Wikipedia organized while at the same time providing space for some of the disorderliness—edit

wars, inaccuracies, mistakes, fights—that collaborative editing brings along (Niederer and van Dijck 2010). Early 2002, however, Sanger turned away from Wikipedia toward an expert-written encyclopedic model, while Wales chose to further pursue the wiki model.<sup>10</sup>

Alongside the debates on amateurs versus experts, the issue of specialists versus generalists surfaced occasionally. Did Wikipedia need specialists **(p.136)** to contribute entries on one specific area, or were generalists who could write about different areas more valuable to the site? As it turned out, researchers proved that the site needs both types of input. Whereas specialists boost the site's quality level, generalists are crucial to the connective fabric of the encyclopedia, as they tend to make more links *between* domains (Halatchliyski et al. 2010).

In fact, the key to understanding Wikipedia's "crowd management" is probably the site's ability to accommodate a large *variety* of users: frequent *and* occasional contributors, passive readers *and* active authors-editors, generalists *and* specialists. Wikipedia's success as an online encyclopedia may be largely attributed to its capacity to handle enormous user diversity and align the various contributions toward one communal product. In the early days, Wikipedians were commonly viewed as a single community, but since its explosive growth after 2006, that community has gradually progressed into an organized hierarchy of different user categories who are all effectively marshaled into executing well-defined tasks. Less frequent contributors and "newcomers" are tactically welcomed and encouraged to improve their edits by experienced contributors using socializing tactics (Choi et al. 2010). Even passive users may be considered indispensable participants rather than free riders because reading is a gateway activity through which newcomers learn about Wikipedia and because large numbers of readers legitimize and raise the encyclopedia's status (Antin and Cheshire 2010). It is precisely the socialization of many different *types* of users into a single regime that accounts for Wikipedia's ability to mobilize and manage crowds.

Successful user socialization thus heavily depends on a techno-managerial system, which facilitates and channels the collaboration of experienced content suppliers, occasional contributors, and (passive) readers at various levels. Starting in 2006, journalists and Wikipedia observers noticed that the platform had begun implementing a strict organization to manage its crowds and open-editing policies.<sup>11</sup> Indeed, a sociotechnical system of sophisticated protocols distributing permission levels to types of users imposes a strict order on decision making over what entries to include or exclude, what edits to allow or block. If we look more closely at Wikipedia's user hierarchy, we can distinguish various user categories with incremental permission levels.<sup>12</sup> Starting with the lowest user group on the ladder, we have, in ascending order, blocked users, unregistered users, new users, and registered (or autoconfirmed) users. One

step higher on the ladder, we find bots, administrators, bureaucrats, and stewards; developers and system administrators take the highest positions. The pecking order in granting permission to execute tasks is defined by hierarchy: blocked users **(p.137)** have the least permission, for they can only edit their own talk page. Unregistered or anonymous users obviously have less authority than registered users, who in turn are at a lower level of power than bots; bots are just below administrators (“admins”). Productive workers who have proven to deliver solid edits are identified and granted administrator’s status (Burke and Kraut 2008). System administrators (or developers) have the highest permission power in the Wikipedia universe, including server access. This is a small user group of only ten people who “manage and maintain the Wikimedia Foundation Servers.”<sup>13</sup>

While this hierarchical system of distributing user power and functions was developed, a number of original Wikipedia supporters started to complain about the implementation of what they considered a cumbersome bureaucracy (Kildall and Stern 2011). Users were no longer given the freedom to edit, they contended; instead, contributions were straightjacketed into a rank-an-file techno-bureaucratic system grounded in Wikipedia’s normative patrol of content. Critics such as Nicolas Carr objected that Wikipedia was no longer an egalitarian collective or an expression of collective intelligence, calling for the burial of that “Wikipedia myth” (Carr 2011: 195). I will return to this criticism later in this section, but first I need to say a few things about the platform’s dependence on technological agents in the production of consensus.

### Technology

What is particularly surprising in Wikipedia’s user dynamics is the significant role that nonhuman actors or bots play in the content management system, not only in terms of quantity but also in their qualitative ranking as autonomous agents. Human editors would never be able to keep up with the massive amount of authoring and editorial activities going on at the online encyclopedia if software robots did not assist them. Bots are pieces of software or scripts designed to “make automated edits without the necessity of human decision-making.”<sup>14</sup> They can be recognized by a username that contains the word “bot,” such as SieBot, TxiKiBot, 3RRBot, and Rambot. In contrast to most proprietary algorithms, for example, EdgeRank or PageRank, Wikipedia’s algorithmic tools are the result of open-access engineering; once approved and deployed by Wikipedians, bots obtain their own user page. They also form their own user group with a certain level of access and administrative rights—a level made visible by flags on a user account page. One year after Wikipedia was founded, bots were first introduced as useful helpers for repetitive administrative tasks.<sup>15</sup> **(p.138)** Since 2002, the number of bots has grown exponentially. In 2006, the number had grown to 151, and in 2008 there were 457 active bots.<sup>16</sup> As of 2010,

over 16 percent of all edits in Wikipedia were made by bots, a number that is still growing (Geiger and Ribes 2010: 119).<sup>17</sup>

In general, there are two types of bots: editing or *coauthoring bots* and nonediting or *administrative bots*. Each of the bots has a very specific approach to Wikipedia content, related to its often-narrow task. Administrative bots are most well known among Wikipedia users: they are deployed to perform policing tasks, such as blocking spam and detecting vandalism. Vandalism combat bots come into action when suspicious edits are made, such as a large amount of deleted content in an article or a more than usual change in content (Shachaf and Hara 2010). Spell-checking bots check language and make corrections in Wikipedia articles. Ban enforcements bots can block a user from Wikipedia, and thus take away his or her editing rights, which is something a registered user is not entitled to do. Nonediting bots are also data miners used to extract information from Wikipedia and find copyright violation identifiers; the latter compare text in new entries to what is already available on the Web about that specific topic, and they report this to a page for human editors to review. Most bots are created to perform repetitive tasks and thus make many edits.

Most vandal-banning strategies can be considered joint human-bot ventures. Researchers Geiger and Ribes (2010) demonstrated in an experiment where they tracked instances of Wikipedia vandalism how humans and bots distribute the work between them; each actor makes separate judgments as they become mutually attuned to each other's tasks. Identification algorithms automatically register obvious signs of vandalism, for instance, a significant removal of content or repeated content reversals during a single day, upon which they alert human editors. Popular tools like Huggle, Twinkle, and Lupin feature algorithms programmed to execute very specific tasks, such as rolling back multiple edits by a single user or signaling a problematic user, so that human editors can decide whether to delete or reverse an edit. Detection algorithms systematically discriminate against anonymous and newly registered users, as they are lowest in the hierarchy. Vandal fighting in Wikipedia is a process of distributed cognition, made possible by a "complex network of interactions between humans, encyclopedia articles, software systems and databases" (Geiger and Ribes 2010: 118).

The category of coauthoring bots seems to be much less known to Wikipedia users and researchers. One of the first editing bots to become productive was Rambot, a piece of software created by Derek Ramsey.<sup>18</sup> Rambot pulls content from public databases and feeds it into Wikipedia, **(p.139)** creating or editing articles on specific content, either one by one or as a batch. Since its inception in 2002, Rambot has created approximately 30,000 articles on U.S. cities and counties on Wikipedia, using data from the *CIA World Factbook* and the U.S. census. In the course of time, bot-generated articles on American cities and counties were corrected and complemented by human editors, following a strict

format: history, geography, demographics, and so on. The articles appear strikingly tidy and informative and they are remarkably uniform. To date, it still is Rambot's main task to create and edit articles about U.S. counties and cities, while human editors check and complement the facts provided by this software robot.

While not every bot is an author, all bots can be classified as "content agents," as they all actively engage with Wikipedia content. The most active Wikipedians are in fact bots; a closer look at various user groups reveal that bots create a large number of revisions with high quality.<sup>19</sup> Adler and colleagues (2008) discovered that the two largest contributors in their edit-longevity-survival-test were bots. Wikipedians rely heavily on these notification systems and feeds for the upkeep of articles. Describing Wikipedians in bipolar categories of humans and nonhumans doesn't do justice to what is in fact a hybrid category: that of the many active users assisted by administrative and monitoring tools, also referred to as "software-assisted human editors." One might also argue that bots are Wikipedians' full-fledged coauthors of many entries, justifying their recognition as "human-assisted automatic editors."

Bots and humans occupy distinct positions on the hierarchical ladder of users, but it is neither human users nor automated bots *alone* that create and maintain Wikipedia's encyclopedic project. It is an integral system of human-bot interaction that helps produce and maintain a kind of modulated sociality, which is unprecedented in scale: Wikipedia's engineered social order structures collaboration of thousands of active contributors, hundreds of bots, and millions of readers who are also potential contributors. As Nathaniel Tkacz (2011) rightly observes: "Bots now police not only the encyclopedic nature of content contributed to articles, but also *the sociality of users* who participate in the community" (79, emphasis added). And that is exactly what some users hold against the techno-managerial system: it may enhance Wikipedia's vigilance, but it also imposes a uniform regime of delegated tasks aimed at perfect execution. Such regimented protocols, critics contend, preclude dissent and nonconsensual behavior. Much like Facebook's thwarting of individual attempts to protest or hack its protocols, Wikipedia's users worry about their site becoming a semiautomated, impermeable operational system that prohibits discord and favors consensus at the expense of a variety of opinions.

**(p.140)** Indeed, the operational apparatus that enforces consensus on its users cannot be seen apart from a set of principles on which the construction of encyclopedic content is grounded. As demonstrated in previous chapters, any algorithmic activity incorporates epistemic assumptions about how content *ought* to be constructed. Wikipedia's content management system is firmly anchored in techno-human protocols, but on what principles of content

production do these protocols operate, and how do these principles scaffold the consensual process?

### Content

As pointed out in this chapter's introduction, the production of Wikipedia content is based on five core principles; these principles serve as guidelines for contributors, instruct the algorithmic logic of bots, and anchor the encyclopedia's quality standards.<sup>20</sup> Three of these rules are relevant to this discussion. First, the rule of verifiability means that readers have to be able to retrace Wikipedia content to reliable sources; therefore, referring to published articles and verifiable resources is necessary to have the article (or edits) accepted. A second related rule is called "No Original Research." Wikipedia simply does not accept new or unpublished research or original thought; again, reliability on Wikipedia means citing proven, published sources. Third, articles have to be written from a "Neutral Point of View" (NPOV); to avoid bias, entries have to be based on facts and facts about opinions, but not on opinions. All contributors, whether single anonymous users, bots, or administrators, are required to comply with these rules, and noncompliance is punished by removal of edits. These standards are maintained through the mechanics of Wikipedia's content management system and enforced through the regime of socialized-user control.

During the first five years of Wikipedia's existence, the first two principles figured in many debates, played out in academia as well as in the press, on the accuracy and reliability of encyclopedic content. The accuracy debates revolved around the question of the alleged quality and corruptibility of sources; the reliability debate concentrated mainly on the lack of trust due to the absence of verifiable authorship. With so many anonymous and amateur contributors, inaccuracy and sloppiness were likely. Researchers entered the quality-of-content debate by testing Wikipedia's robustness in terms of content vandalism.<sup>21</sup> In December 2005, the first academic research that systematically compared the accuracy of Wikipedia to *Encyclopedia Britannica* entries was published in *Nature* (Giles 2005). Investigators checked 42 science articles in both publications without knowing their **(p.141)** source and found Wikipedia and Britannica to be almost equally accurate. Not surprisingly, the news was trumpeted on the BBC News as "Wikipedia Survives Research Test."<sup>22</sup> With this outcome, Wikipedia was recognized as a reliable encyclopedia, at least in terms of accuracy. Many such accuracy tests followed; peer-reviewed studies performed between 2006 and 2011 again proved the reliability of sources as a thermometer of exactitude in diverse disciplinary fields.<sup>23</sup>

The second debate concentrated on the reliability and questionable integrity of *anonymous* sources. How can an entry be objective if the encyclopedia accepts copyedits from anonymous contributors who might have a vested interest in its outcome? Critics like Keen (2008) and Denning and colleagues (2005) fiercely

objected to the distribution of editing rights to all users. In response to these objections, various technological remedies have countered the weakness of anonymous authorship. First, Wikipedia's content management system, as we have seen above, allots very limited power to anonymous contributors, whose edits can be overruled by anyone who has a higher level of permission (which is anyone except for blocked users). Since anonymous users are very low in the Wikipedia pecking order, their edit longevity is likely to be short when they break the ground principles. Besides, there is an increasing availability of "counter-tools" that allow for checking the identity of contributors, or at least their location of origin. Starting at the most basic level, on the History page of each Wikipedia entry we can find the time stamp and IP address for every anonymous edit made. Third-party apps, like the WikiScanner, make it possible to geo-locate anonymous edits by looking up the IP addresses in an IP-to-Geo database, a listing of IP addresses and the companies and institutions they belong to, and track a potential interest.<sup>24</sup> With the introduction of WikiTrust, in the fall of 2009, the reliability of newly edited parts of Wikipedia articles was coded in colors, indicating an author's reputation based on the lifespan of his or her other contributions. Instead of turning to experts to check all articles, Wikipedia further enhanced the robustness of its sociotechnical system to enforce its principles.

Of all five principles, the Neutral Point of View (NPOV) caused most discussion among Wikipedia adepts; it was regarded as the principle that most rigorously coerced users into consensus formation and hence squelched discussion and diversity of opinion. Perhaps ironically, it was also precisely this principle and the apparatus built on it that initially drew praise as one of Wikipedia's greatest innovations. Historian Roy Rosenzweig (2006), for instance, stated that Wikipedia's value lies precisely in the dynamics of its continuous editing process, where a regulated system of consensus-editing bares *how* history is written: "Although **(p.142)** Wikipedia as a product is problematic as a sole source of information, the process of creating Wikipedia fosters an appreciation of the very skills that historians try to teach" (138). Rosenzweig points to some of the platform's most important interface features, such as the built-in History page, a feature that lets you check the edit history of each entry, or the Recent Changes pages, which allow users to see how an entry has been modified.

Whereas Rosenzweig lauds this aspect of Wikipedia's interface, others object that the diversity of opinion and discussion should not be relegated to pages *behind* the visible interface because it requires extra clicks as well as technical or interpretative ingenuity from the reader. Instead, civil debate and discussion should be included in the entry's main page. Some detractors reject the NPOV rule as ideologically suspect to begin with, particularly if strictly enforced by and extensive operational apparatus. As British historian Daniel O'Sullivan (2011) observes: "In contrast to a world of increasing homogeneity in which difference is subsumed under the rule of dominant opinion and standardized knowledge,

Wikipedia has the potential to proliferate voices and dissent—and yet the increasingly bureaucratic ‘policing’ of its content, as for example with NPOV, means it is in danger of merely mirroring the typical knowledge economies of the West” (48). In other words, hiding discussion behind the visible user interface stimulates homogenization while discouraging alternative interpretations and discord.

Actual contributors to Wikipedia have complained not only about the rules’ conspicuous ideological portent, but also about the cumbersome policing apparatus these rules bring along. In a humorous article on his attempts to contribute edits to the online encyclopedia’s entry on the American Haymarket trial in 1886, Timothy Messer-Kruse, a professor in American labor history, expresses his frustration about the system that forces him to oblige to Wikipedia’s consensual disciplinary system:

My improvement lasted five minutes before a Wiki-cop scolded me, “I hope you will familiarize yourself with some of Wikipedia’s policies, such as verifiability and undue weight. If all historians save one say that the sky was green in 1888, our policies require that we write ‘Most historians write that the sky was green, but one says the sky was blue.’ ... As individual editors, we’re not in the business of weighing claims, just reporting what reliable sources write.” I guess this gives me a glimmer of hope that someday, perhaps before another century goes by, enough of my fellow scholars will adopt my views that I can change that Wikipedia entry. Until then I will have to continue to shout that the sky was blue.<sup>25</sup>

**(p.143)** The NPoV rule is thus a guiding principle for building a functional apparatus, but that apparatus simultaneously shapes the meaning of neutrality as the “average opinion” or “shared interpretation.” In 2006, American talk show host Stephen Colbert launched the term “wikiality” to indicate the encyclopedia’s circular logic of creating a reality that we can all agree on: “If you claim something to be true and enough people agree with you, it becomes true.”<sup>26</sup> Viewed in this light, the neutrality principle shows at least some likeness to the popularity principle employed by Google and Facebook. Some Wikipedians have countered this criticism saying that the NPoV principle may at times be untenable, especially in those situations when a disinterested position is impossible, but in general, it works as a functional guideline for processing content.<sup>27</sup>

Consensus, as may be concluded from these debates, has become a sociotechnical construct—sociality regimented in a technocratic system that yields formatted content. Sociologist Christian Pentzold (2011: 718) articulates this very precisely in his ethnographic study of Wikipedia users when he observes that contributors do “not only have to learn to use the software tools, but they also have to acquire the appropriate beliefs, values, common

understandings and practices.” The consensual apparatus that Wikipedia has become, however, cannot be regarded separately from the socioeconomic structure through which it evolved. Therefore, we now turn to Wikipedia’s ownership structure, business model, and governance, in order to see how the norms for consensus formation are sustained by the platform’s organization.

### 7.3. A Consensual Apparatus between Democracy and Bureaucracy Ownership Structure

It is important to recall that Wikipedia is the only nonprofit, nonmarket platform in the top ten of ranked Internet sites, a list that is topped by Google, Facebook, and YouTube respectively. However, few people realize that Wikipedia started out in 2001 as part of the Bomis Company, a for-profit enterprise founded by Jimmy Wales. The original founders’ skirmishes over “Nupedia” and over the best context in which to build an open-access and open-licensing platform made Wales realize that a “wiki” model could only flourish in a nonprofit organization. When the Wikimedia Foundation was established two years later, it first operated as a fund-raising body run by volunteers. Wales, as the platform’s founder, was still very much the driving force behind the project, yet despite his charisma **(p.144)** Wikipedians did not always appreciate his personal involvement with every part of the operation. The Wikimedia Foundation, directed by a board of trustees and operating under U.S. law, raised funds to cover the online encyclopedia’s operational expenses, such as servers and equipment.<sup>28</sup>

Meanwhile, ownership of the Wikipedia platform—that is, its content and trademark—remained with the Wikipedia community, which was also represented in the foundation’s board. As noted in the previous section, the community grew exponentially after 2005, which is why the platform developed a substantial governance apparatus with its own rules and norms to manage the large numbers of volunteers. Between 2006 and 2009, the foundation simultaneously metamorphosed from a volunteer-based nonprofit organization to a global organization run by paid employees, with a centralized American headquarters and decentralized national chapters (Fuster Morell 2011). All national Wikipedias are governed and overseen by the Wikimedia Foundation. The online encyclopedia is just one of many wiki projects overseen by the foundation; other projects include Wiki-quotes, Wikiversity, Wikinews, and Wiktionary.

Wikipedia’s management decision to build and sustain its platform in the nonprofit realm was completely apt and logical; and yet the ultimate structure it developed also divulges signs of awkwardness, as the encyclopedia’s “nonmarket peer production” is not free from corporatized features. Predictably, a number of early adepts were disappointed in the managerial structure the platform eventually developed. The resulting structure, reflected in the Wikimedia Foundation on the one hand and the Wikipedia project on the other,

may be considered the online equivalent of the American public broadcast concept, represented by the Corporation for Public Broadcasting and the Public Broadcasting System. By dividing the Wikimedia Foundation from the encyclopedic project, it strictly adhered to a separation of fund-raising and editorial activities, but the inequity between the two entities felt awkward to some people. Internet researcher Mayo Fuster Morell voiced some Wikipedians' disenchantment with the platform's hybrid organizational structure, which harbors two different democratic logics:

The Wikimedia Foundation adapted a traditional, representational democratic logic, while the community remains an innovative, elaborate, organizational model. The foundation is based on a contractual relationship with the staff, while the community relies on voluntary self-involvement. The foundation runs according to an obligatory hierarchy and a representational board, while the community relies on openness to participation, a volunteer hierarchy, and (mainly but not always) consensus decision-making. The foundation bases its **(p.145)** power from a centralized base of coordination and long-term planning in San Francisco, while the community is decentralized and serendipitous. (Fuster Morell 2011: 333)

The gradually evolving professional structure of the project reminded some early Wikipedia adepts of the traditional editorial, and even corporate, structure of mainstream publishers or public broadcasters. However acute these observations, the dissatisfaction of assorted Wikipedians with the platform's ultimate organization may have lain less with its managerial decisions concerning ownership *structure* than with its governance model, which was hailed as democratic by some and decried as pure bureaucracy by others.

### Governance

Wikipedia's elaborate governance system has been likened in recent years to both public state organizations and private businesses, yet neither model really applies. Some studies described Wikipedia's governance using qualifiers such as "anarchy" and "monarchy," while others have pointed to the project's democratic, statelike organization that has taken on the characteristics of a bureaucracy. According to the "wisdom of crowd" paradigm, Wikipedia should have taken the form of anarchy where everyone, regardless of qualifications, is allowed to participate, and where there is no top-down control. Others asserted that Wikipedia is essentially run by an autocrat, Jimmy Wales—the "uncrowned king" who patrols his domain with the help of a "selected army of volunteer sheriffs" (O'Neil 2011: 312). Both claims can be dismissed as hyperbole.

Arguments that Wikipedia has turned into a democratic bureaucracy seem to hold more weight, though. Indeed, the process of consensus formation among editors and contributors resulted in an extensive apparatus of committees and

ruling boards, the apex of which is the Mediation Committee, the highest body of arbitrators for handling serious conflicts about content.<sup>29</sup> An extensive Mediation Policy guides the committee in handling disputes over content, differences in opinion with regard to neutrality versus interested positions.<sup>30</sup> In addition, Wikipedia also installed an Arbitration Committee, acting as a final binding decision-maker, which for instance examines disagreements over serious misconduct, banned users, and vandalism—disputes the community has been unable to resolve itself.<sup>31</sup> Both policies are extensive documents prescribing precise steps in processes that are conspicuously similar to legal procedures, including appeal boards and clerks.

**(p.146)** For some, legalistic governance procedures are precisely what turned Wikipedia into a bureaucratic monster. Perhaps not entirely serious, but certainly revealing an undertone of criticism, is Nicolas Carr’s description of the intricacies of Wikipedia’s hierarchy and the breadth and complexity of its rules as follows:

Maybe it should call itself “the encyclopedia that anyone can edit on the condition that said person meets the requirements laid out in Wikipedia Code 234.56, subsections A34–A58, A65, B7 (codicil 5674), and follows the procedures specified in Wikipedia Statutes 31-1007 as well as Secret Wikipedia Scroll SC72 (Wikipedia Decoder Ring required).” (Carr 2011: 200)

Aggravating Wikipedia’s dense bureaucracy is the total absence of democratic elections or a perspicuous representation of users, according to some critics. Social scientist Mathieu O’Neil, for instance, argues that the semilegal system of regulations and bylaws was not democratically formed, and that Wikipedia defies any democratic potential as long as it lacks a constitution and clearly defined voting procedures (O’Neil 2011: 321).

To be sure, the platform’s choice for this elaborate governance structure has pertinent advocates and strong defenders. According to longtime Wikipedian and researcher Konieczny (2010), the project is neither anarchy nor monarchy, nor can it be called a democracy or bureaucracy, although it certainly mixes features of all four. Since Wikipedia’s eclectic model of governance does not fit one established model, Konieczny proposes to apply the concept “adhocracy” to the online encyclopedia’s organization. First coined by Alvin Toffler in his book *Future Shock* (1970) as an antonym to “bureaucracy,” the term refers to the thousands of ad hoc, multidisciplinary teams forming temporary alliances to create and maintain content according to narrowly defined tasks. With nearly 15 million registered volunteers worldwide and over 1,500 administrators to marshal its contents, Wikipedia has certainly tested a new model of public governance in digital space; there are teams to write specific entries, but also teams for content review and editing, teams to review requests for

administratorship, and teams to select featured articles for the home page. Projects are highly decentralized and leadership is based on “requests from respected editors” (Konieczny 2010: 277). In an adhocracy, leadership and policies “emerge” instead of being consciously decided upon (Mintzberg 2007). All these features of adhocracy apply to Wikipedia’s governance philosophy and are highly relevant to the success of the site.

Needless to say, adhocracy is ultimately dependent on an extensive sociotechnical apparatus to sustain the scale and scope of Wikipedia’s decentralized leadership and to guarantee the ultimate cohesion of encyclopedic **(p.147)** content produced by multidisciplinary teams. As Gilles Deleuze (1990, 1992) has pointed out in his acute revision of Foucault’s disciplinary institutions, a “society of control” deploys technology as an intricate part of its social mechanisms. Like any large public system, Wikipedia works through disciplinary control by means of an extensive hierarchy composed of distinct roles, such as administrators, system operators (“sys-ops”) and developers; the system, as explained in the previous section, exerts control through reward and punishment, by raising a dedicated user’s authority level, and by blocking contributor’s rights of those who deviate from the rules (Burke and Kraut 2008). But that system of normative control could never work on such a large scale if it were not for an extensive set of tools: bots, algorithms, interface features, and a content management system.

Wikipedia’s consensual apparatus is indeed a techno-cultural construct that is cemented in a matching socioeconomic model of governance and ownership—a complex and refined system that has been fine-tuned over the years. The platform’s operation and governance is firmly anchored in an ideology of objectivism and neutrality—values that are coded into mechanisms and protocols for consensus and branded by the Wikipedia seal of “factual” approval. Some resent its outcome because the platform does not reflect the messiness of democracy, complaining that Wikipedia has straightjacketed egalitarian processes in an enforced hierarchical regime of sociotechnical control. Others laud the result because the project mobilizes an unprecedented number of users, while consensus formation has turned into an orderly and transparent process for everyone to check and see, even if that means clicking behind the visible interfaces. Whatever view one takes, Wikipedia still distinctly distinguishes itself from other market-based platforms in the way the project is funded.

### Business Model

In 2003, Wikipedia distanced itself from the profit model under which it was started; since then, the encyclopedic project has never allowed advertising or commercial promotion to support its site. The Wikimedia Foundation accepts donations from private and corporate parties; donations have no purported impact on Wikipedia content because independence and neutrality are the online encyclopedia’s trademarks. As we have seen in previous chapters, when large

companies in the first part of the decade bought up UGC communities, such as YouTube, they were quick to align the site's original purpose with the company's monetizing schemes. The social and intellectual activity of encyclopedic knowledge production has a **(p.148)** strong allegiance to a nonmarket public sphere, a sphere that, according to Yochai Benkler (2006), "enables many more individuals to communicate their ... viewpoints to many others, and to do so in a way that cannot be controlled by media owners and is not as easily corruptible by money as were the mass media" (11). It is unlikely that volunteers would have kept contributing their knowledge and skills if corporate owners had exploited the site for monetary gain. Research has shown that users' strongest motivation for contributing to Wikipedia is their internal drive to share knowledge with others (Yang and Lai 2010).

In other words, the nonprofit, nonmarket business model that Wikipedia has chosen is inimically interwoven with the volunteer-based peer-production system the platform so successfully implemented. Even if not all users are valued equally and some have more powers than others in the Wiki-universe, no users can financially profit from the encyclopedia; the only gain they receive is recognition. The friction in this respect might be located in the fact that employees of the foundation are paid, while unpaid volunteers carry out all encyclopedic projects. If we recall YouTube and Flickr's monetizing schemes tested out in a "commons" environment, the clarity of Wikipedia's model certainly distinguishes itself from the mixed or unclear user remuneration models for-profit sites experimented with.

However, not everyone takes the inextricable intertwining of a peer-production model with nonmarket funding schemes for granted. For one thing, many commercial enterprises have mistaken the kernel of Wikipedia's success—its ability to harness the expertise and input of millions of users—as a business strategy that can be isolated and transposed to a for-profit environment. Looking at Wikipedia's success, economists started to propagate peer production as a kind of overarching humanist principle of organization that effaces the distinction between market and nonmarket schemes. Tapscott and Williams, authors of *Wikinomics* (2006), for instance, praise the convergence of commerce and commons and introduce a new kind of management-speak favoring buzzwords like "co-creation" and "prosumption." Social networks, according to leading business scholars, were changing the rules of the create-and-capture-value game, as more and more firms are "using them as platforms to reach out to customers and exploit their lock-in effects" (Wirtz, Schilke, and Ullrich 2010: 282). In other words, one element of Wikipedia is uncritically transferred to the commercial domain, where it is expected to translate into profitable customer value—an expectation that is problematic on more than one account (van Dijck and Nieborg 2009).

Unlike Google and Facebook, Wikipedia firmly grounds itself in a nonmarket space; the site does not exploit proprietary algorithms; its governance model, albeit complex, at least is transparent for its users; and the **(p.149)** platform's operation suits its nonprofit objective. Notwithstanding some misgivings, one could argue that the Wikipedia model proves the perennial viability of a nonmarket peer-production model amid a market-driven environment. And yet it is disputable whether Wikipedia has truly managed to occupy a privileged space independent from the main corporate players and the norms and principles undergirding the ecosystem of connective media.

### 7.4. A Nonmarket Space in the Ecosystem?

At first sight, Wikipedia has managed to carve out a separate space for itself in the Web 2.0 universe, having procured a nonprofit realm and having adopted a set of rules that prohibits commercial, controversial, one-sided, or overtly self-promotional content. Following the footsteps of traditional professional journalism or, for that matter, institutional knowledge production, the online project succeeded in translating the ideology of neutrality and objectivism into a system for protocolled consensus that mobilizes millions of active users and attracts a huge readership. But how separate or "sovereign" is this space? Can a nonprofit enclave of neutrality exist when it is woven into the corporate fabric of connective media? And how does the ideology of neutrality and objectivity relate to the sharing logic and popularity rankings fostered by Facebook and Google? In short, how does Wikipedia hold up in a culture of connectivity where the default is on frictionless sharing and data mining?

Wikipedia's nonprofit status represents a minority in the entire ecosystem of connective media; few small platforms with a nonprofit objective appear in the top 500 ranked platforms. Far from being threatening to corporate players in the same realm, Wikipedia may actually benefit from its lonesome-at-the-top position because it is hardly competing for the same user resources, advertiser dollars, or surfer's attention. If anything, the presence of one respected nonmarket peer-producer actually boosts the functionality and image of corporate platforms such as Facebook, YouTube, Flickr, Twitter, and others. Wikipedia's users generate content that purportedly has more than entertainment or socializing value, hence uplifting the status of *all* social media content. Amid a sea of goofy videos, pointless babble tweets, endless updates, and nippy snapshots, Wikipedia's encyclopedic content at least has the dignified status of being verified, impartial, and durable.

In contrast to ephemeral messages and trending topics, online encyclopedic entries are built to last, and yet they are as dynamic and flexible as **(p.150)** the Web itself. One of the platform's unique properties is that content grows in value as time passes, and that an entry's truth is validated by an elaborate system guaranteeing verification and accuracy. Therefore, having a page on Wikipedia has more gravity in the world of mass self-communication than having a profile

on Facebook. In more than one way, Wikipedia has become an online trademark for reliability, quality, authoritative content, and convenience, due to the extensive editorial protocols for consensus formation, staked in the ideology of neutrality. The brand has almost achieved the status of judge and jury of content validation; if listed among other search results, links to Wikipedia entries are perceived as neutral and impartial. The platform's nonprofit status is undoubtedly vital to the brand's independent image, but its rigid system for peer production and governance protocols is at least as crucial.

And yet the platform's peer-production model cannot be equated with its nonprofit structure. Of course, on the level of the microsystem the site functions as a nonprofit model, anchored in an independent foundation that raises the necessary funds. However, in the context of the wider ecosystem of connective media, Wikipedia's nonmarket status—an important part of its trademark—may be harder to maintain, as the space in which the platform operates is increasingly interpenetrated by other (commercial) platforms, notably Facebook and Google, resulting in these platforms mutually enhancing each other's ideology and operating logic. Two examples may illustrate this development.

In the summer of 2010, Facebook announced its collaboration with Wikipedia by including so-called “community pages” on the social network site.<sup>32</sup> Community pages are pages that link fields a user has filled out on his or her Facebook profile to Wikipedia articles about that same topic, as well as to posts from other Facebook members interested in that topic. For instance, if you fill in the term “cooking” or “lizards” on your Timeline, Facebook will link you to Wikipedia's page on this topic and simultaneously connect you to other members who are interested in the same topic. As Facebook points out: “Community pages are based on the concept of ‘shared knowledge’ that underlies Wikipedia.” Facebook has licensed Wikipedia content under a Creative Commons license. Hence, Facebook's notion of “sharing information” and Wikipedia's definition of “sharing knowledge” are not only semantically equated but also literally integrated. The connection is mutually beneficial: if there is no lemma on Wikipedia to connect you to, Facebook will send you an invitation to suggest a Wikipedia article. The ideology of sharing and the ideology of neutrality seem perfectly aligned to serve the same purpose, even though they are pursued in entirely different—commercial versus nonprofit—contexts.

**(p.151)** Another seamless fit appears to be Google's search rankings and Wikipedia's consensual apparatus. Wikipedia appears to be highly dependent on large corporate platforms in the ecosystem for boosting its traffic volume, and these platforms' algorithms and business models are intrinsically commercial. Since 2006, Wikipedia pages have ranked extremely high in the Google Web searches. In 2007 and 2008 researchers found that as much as 96 percent of all Wikipedia pages ranked in the top ten results of Google searches; the online encyclopedia also draws over 60 percent of all its traffic from Google.<sup>33</sup> Indeed,

this could well be the result of Wikipedia's popularity as a source for information seekers; it could also represent Wikipedia's reputation for usefulness as measured on the Google scale. But an almost perfect score in Google's top rankings without more aid than just PageRank's algorithmic judgment seems too good to be true. More likely, Google boosts Wikipedia traffic because it benefits the search engine in more than one way.

As media theorist Siva Vaidhyanathan (2011) observes, Google likes to link to Wikipedia articles because they have already worked out norms and processes for neutralizing controversial content and contentious topics, a quality that aids Google's search engine value. In turn, he argues, "Google serves Wikipedia well because the editing standards for inclusion in Wikipedia depend on an entry's relevance; and relevance, circularly, depends on how prominently Google presents that subject" (Vaidhyanathan 2011: 63). Wikipedia's neutrality and consensus apparatus thus perfectly complements the popularity-ranking logic underpinning Google Search, where the most popular results allegedly rank highest. Google's ranking algorithms have often been questioned in terms of their impartiality, as distinct from the company's advertising interests (Batelle 2005). As we have seen in the previous chapter, ad space is awarded to the highest bidder, and the popularity principle is intimately intertwined with the profit principle. But platforms mutually profit from the alliance. Google's reliability as a search engine indisputably benefits from being associated with Wikipedia's neutral and impartial content, boosting the search engine's image. Mutatis mutandis, Wikipedia profits from increased traffic volumes. In the wider universe of platformed sociality, Google's popularity principle and Wikipedia's neutrality principle are complementary and mutually enhancing.

What we learn from the interconnectedness between Wikipedia and its commercial counterparts playing in the same Ivy League of connective media is that their algorithmic and operational logics, while distinctly separate, also perfectly mesh. The Wikipedian definition of "knowing" or rather "building online knowledge" is the largest possible consensus about facts we can agree on. Wikipedia neutralizes its content by distinguishing **(p.152)** two layers: a visible layer of consensus backed up by an invisible yet accessible layer of discussion and a heterogeneous interpretation on the History and edit pages. This division of layers is mirrored on the organizational level by separating foundation from platform. Fund-raising and editorial activities are strictly divided in the organizational management and production of encyclopedic content. But how strong is this division of interests? In 2010, the coziness between Google and Wikipedia was underlined by Google's gift of \$2 million to the Wikimedia Foundation. As one British journalist subtly remarked, Google's donation to the nonprofit foundation is "not a grant, it's an investment in making sure it can keep dominating search."<sup>34</sup> Of course, a donation does not mean that Google influences Wikipedia's editorial decisions, but it can hardly be denied

that frictionless partnership strategies are pursued at every level of the ecosystem.

So what does Wikipedia imply for the possibility of carving out a nonprofit space in an ecosystem dominated by corporations? If we recall Flickr's half-baked attempts to create a nonmarket niche within the microcosm of its own platform economy, described in chapter 5, the uncomfortable fit between commons and commerce could well be explained by Flickr Commons's subordination to Yahoo's general for-profit objectives. This is not true for Wikipedia, which rigorously pursues a nonmarket model on the level of its microsystem. And yet this consistency is undermined not at the platform level, but at the cross-platform level—the space where platforms operate in a highly interdependent ecosystem of connective media. Is it possible at this level to secure a space *away* from market principles and establish a truly nonprofit realm? And how does this inevitable partnership of profit and nonprofit platforms reflect (and enhance) a wider culture in which these coalitions become the norm?

Connections between profit and nonprofit organizations in the ecosystem of connective media are modeled after American private-corporate partnerships, such as museum foundations and nongovernmental organizations. In contrast to some other parts of the world, Western culture has decreasing *public* space in which social and creative activity can take place; corporate and nonprofit organizations fill this zone. In more than one respect, online sociality mirrors offline sociality—a realm where the boundaries between for-profit, nonprofit, and public space are porous, but an implicit hierarchy dominated by market forces inevitably defines the conditions for development. Not surprisingly, as I concluded in chapter 4, the global space of interconnected media has encouraged digital companies to commercialize social areas that governments and states have neglected or have left underfunded: education, art projects, health care, archives, and knowledge institutions. There are no niches of online sociality that are **(p.153)** purely nonprofit or public, simply for the reason that they can hardly flourish without support of the infrastructure “made social” by Google, Facebook, Twitter, and other companies. Wikipedia's success as a nonprofit online encyclopedia is highly dependent on its frictionless compatibility with mainstream big players; if its mechanisms, principles, and ideology did not mesh with theirs, Wikipedia's position in the ecosystem would likely dwindle.

All this hardly detracts from Wikipedia's laudable goal and much-appreciated result. The platform's history shows ample symptoms of a connective culture—a culture that is at once inescapable and yet abstruse—where the norms for online sociality and the meanings of profit, nonprofit, and public are still being negotiated. Since this process is ongoing, it is important to uncover the underlying structures and stress the big picture. The previous five chapters have related the critical histories of five individual platforms, explored their distinct

positions vis-à-vis each other and laid out the various fibers the online fabric is made of. In the next chapter, we will turn the spotlight on the ecosystem as such and investigate how the larger constellation of connected platforms informs and shapes sociality, creativity, and knowledge.

Notes:

(1) . For Wikipedia's five core principles, see the home wiki page. Available at [http://en.wikipedia.org/wiki/Wikipedia:Five\\_pillars](http://en.wikipedia.org/wiki/Wikipedia:Five_pillars).

(2) . In May 2012, Wikipedia was ranked number 6 on the Alexa rankings. Available at <http://www.alexa.com/topsites>. The latest updates on Wikipedia's facts and figures can be checked at the About Wikipedia page. Available at <http://en.wikipedia.org/wiki/Wikipedia:About>. Last checked May 27, 2012.

(3) . Germany's Wikipedia overseer, a member of the Wikimedia Foundation, came up with the idea of nominating the online encyclopedia for the World Heritage or Intangible Cultural Heritage List. Both nominations are ill fits not only because the project lacks the necessary maturity for listing, but also because the World Heritage List so far only includes historical monuments and natural sites (like the Amsterdam Canal district or the Great Barrier Reef), and the Intangible Cultural Heritage List only includes *endangered* traditions and practices (like flamenco). See K. O'Brien, "Worthy Online Resource, but Global Cultural Treasure?" *New York Times*, May 22, 2011. <http://www.nytimes.com/2011/05/23/technology/23wikipedia.html?pagewanted=2>. Last checked May 28, 2012.

(4) . The word "crowdsourcing" was launched by journalist Jeff Howe in 2006 in his article "The Rise of Crowdsourcing" in *Wired*. Available at <http://www.wired.com/wired/archive/14.06/crowds.html>. The term "collaborative knowledge" was first used by Marshall Poe in his September 2006 article "The Hive" in *The Atlantic*. Available at <http://www.theatlantic.com/magazine/archive/2006/09/the-hive/5118/>. Last checked May 28, 2012.

(5) . Journalist Nicolas Baker summed up the charms of Wikipedia in a style typical of such praise: "Wikipedia flourished partly because it was a shrine to altruism—a place for shy, learned people to deposit their trawls." See N. Baker, "The Charms of Wikipedia," *New York Review of Books*, March 20, 2008. Available at <http://www.nybooks.com/articles/archives/2008/mar/20/the-charms-of-wikipedia/?pagination=false>. Last checked May 28, 2012.

(6) . Jimmy Wales was cited in 2006 by blogger Aaron Swartz as downplaying the myth that Wikipedia was written by the masses, by doing the math: "I expected to find something like an 80-20 rule: 80 percent of the work being done by 20 percent of the users, just because that seems to come up a lot. But it's actually much, much tighter than that: it turns out over 50 percent of all the edits are done by just .7 percent of the users ... 524 people.... And in fact the most active 2

percent, which is 1400 people, have done 73.4 percent of all the edits.” The remaining 25 percent of edits, he said, were from “people who [are] contributing ... a minor change of a fact or a minor spelling fix ... or something like that.” See A. Swarz (2006), “Who writes Wikipedia?” Raw Thought Blog. Available at <http://www.aaronsw.com/weblog/whowriteswikipedia>. Last checked May 28, 2012.

(7) . Researchers Ghosh and Prakash (2000) were among the first to disaggregate the “many minds” myth in the open software movement; their conclusion was that “free software development is less a bazaar of several developers involved in several projects and more a collation of projects developed single-mindedly by a large number of authors” (1).

(8) . Internet critic Andrew Keen (2008) is one of these theorists in favor of the expert approach; he applauded Sanger for leaving the wiki model and for coming to his senses about the “debased value of amateur contributions” in favor of expert-professionals (186).

(9) . Journalist Marshall Poe, in his article “The Hive” in *The Atlantic* (September 2006), painstakingly described the evolution of Wikipedia’s principles from the early Nupedia experiment to Wikipedia five years after its inception. Available at <http://www.theatlantic.com/magazine/archive/2006/09/the-hive/51118/>. Last checked May 28, 2012.

(10) . Sanger eventually, in March 2007, launched the Citizendium project, but it never really took off. According to the Wikipedia lemma on Citizendium: “As of July 2011, it had 15,920 articles, of which 155 had achieved editorial approval, and around 45 contributors making at least 20 edits a month, by October 27, 2011, the site had fewer than 100 active members.” For more information on the Citizendium Beta project see [http://en.citizendium.org/wiki/Welcome\\_to\\_Citizendium](http://en.citizendium.org/wiki/Welcome_to_Citizendium). Last checked May 28, 2012.

(11) . Pulitzer Prize-winning journalist Stacy Schiff observed in her extensive Wikipedia profile that, curiously, mob rule did not lead to chaos: “Wikipedia, which began as an experiment in un fettered democracy, has sprouted policies and procedures.” See S. Schiff, “Know It All: Can Wikipedia Conquer Expertise?” *New Yorker*, July 31, 2006. Available at [http://www.newyorker.com/archive/2006/07/31/060731fa\\_fact](http://www.newyorker.com/archive/2006/07/31/060731fa_fact). Last checked May 28, 2012.

(12) . For a complete overview of user groups and their access and permission levels, see the Wikipedia page. Available at [http://en.wikipedia.org/wiki/Wikipedia:User\\_access\\_levels](http://en.wikipedia.org/wiki/Wikipedia:User_access_levels). Last checked May 27, 2012.

(13) . See Wikipedia System Administrators page. Available at [http://meta.wikimedia.org/wiki/System\\_administrators](http://meta.wikimedia.org/wiki/System_administrators).

(14) . See Wikipedia Bot Policy page. Available at [http://en.wikipedia.org/wiki/Wikipedia:Bot\\_policy](http://en.wikipedia.org/wiki/Wikipedia:Bot_policy). Last checked May 28, 2012.

(15) . See Wikipedia History of Bots page. Available at [http://en.wikipedia.org/wiki/Wikipedia:History\\_of\\_Wikipedia\\_bots](http://en.wikipedia.org/wiki/Wikipedia:History_of_Wikipedia_bots). Last checked May 28, 2012.

(16) . See Wikipedia Editing Frequency of All Bots page. Available at [http://en.wikipedia.org/wiki/Wikipedia:Editing\\_frequency/All\\_bots](http://en.wikipedia.org/wiki/Wikipedia:Editing_frequency/All_bots)

(17) . Some claim an even higher percentage of bots in Wikipedia: Geiger (2011), for instance, claims that “bots make about 50 percent of all edits, and users with semi-automated editing tools make another 30 percent” (79).

(18) . See Wikipedia Ram-Man User Page. Available at <http://en.wikipedia.org/wiki/User:Ram-Man>. Last checked May 28, 2012.

(19) . See List of Wikipedians by Number of Edits. Available at [http://en.wikipedia.org/wiki/Wikipedia:List\\_of\\_Wikipedians\\_by\\_number\\_of\\_edits](http://en.wikipedia.org/wiki/Wikipedia:List_of_Wikipedians_by_number_of_edits)

(20) . For the three Wikipedia’s core principles, see the respective Wikipedia pages. Available at [http://en.wikipedia.org/wiki/Wikipedia:Neutral\\_point\\_of\\_view](http://en.wikipedia.org/wiki/Wikipedia:Neutral_point_of_view). [http://en.wikipedia.org/wiki/Wikipedia:No\\_original\\_research](http://en.wikipedia.org/wiki/Wikipedia:No_original_research). <http://en.wikipedia.org/wiki/Wikipedia:Verifiability> All checked May 28, 2012.

(21) . Informatics researcher Alexander Halavais, for instance, intentionally contributed incorrect information to Wikipedia entries; for his “Isuzu Experiment,” he inserted 13 mistakes into 13 different entries, expecting that most of the errors would remain intact, but much to Halavais’s surprise, his wrongful edits were all corrected within a couple of hours. See A. Halavais, “The Isuzu Experiment,” *A Thaumaturgical Compendium*, 2004. Available at <http://alex.halavais.net/the-isuzu-experiment/>. Last checked May 28, 2012. Halavais’s approach was heavily criticized, mainly because he deliberately littered his object of study. One of the problems with these tests is that they treat isolated Wikipedia content as a static product, assessing its entries against other encyclopedic records. A technical problem was that Halavais made all changes from the same username and IP address, rendering it all too easy for bots and Wikipedians to undo his edits. Philosopher of science P. D. Magnus (2008) later provided a corrective to Halavais’s research method by inserting inaccuracies distributed across IP addresses and fields of expertise. He found that one-third of the errors were corrected within 48 hours, and most others were “corrected by association,” as was the case with Halavais’s experiment. Halavais and Lackaff (2008) examine Wikipedia’s reliability and completeness, assessing qualities of its users rather than those of its systems (see also Niederer and van Dijck 2010).

(22) . See “Wikipedia Survives Research Test,” *BBC News*, December 15, 2005. Available at <http://news.bbc.co.uk/2/hi/technology/4530930.stm>. Last checked July 18, 2011.

(23) . In 2006 information systems researcher Thomas Chesney conducted empirical research into the accuracy of Wikipedia, asking a total of 258 experts (academics) and nonexperts to fill out a survey about a Wikipedia article from their area of expertise (or, for the laymen, in their realm of interest). The respondents found mistakes in 13 percent of the Wikipedia articles. But Chesney also found that the experts gave the Wikipedia articles a higher credibility rating than the nonexperts did. Contrary to the perceived inaccuracy of Wikipedia, the respondents found Wikipedia to be a reliable source of information on the Web. In 2011, a study from Brigham Young University proved the reliability of Wikipedia’s sources in the field of political science. See <http://www.sciencedaily.com/releases/2011/04/110414131855.htm>. Last checked May 28, 2012.

(24) . The WikiScanner is a tool created by California Institute of Technology student Virgil Griffith in 2007, designed to reveal bias. Tools like the WikiScanner facilitate the tracking of anonymous users by revealing who and where they actually are; they also empower researchers and journalists trying to localize and expose biased content. Griffith collects the most spectacular results on his website, where he also states he created the WikiScanner (among other reasons) to “create a fireworks display of public relations disasters in which everyone brings their own fireworks, and enjoys.” In the summer of 2008, Griffith launched the WikiWatcher suite, a set of tools designed for monitoring and maintaining Wikipedia. The suite includes a tool that makes it possible to de-anonymize users with a username whose IP addresses match that of other user(name)s or companies/institutions in a IP-to-Geo database. This stretches the notion of anonymity from the unregistered to the registered with a username. For more details, see Griffith’s home page. Available at <http://wikiwatcher.virgil.gr/> Last checked May 28, 2012.

(25) . See T. Messer-Kruse, “The ‘Undue Weight’ of Truth on Wikipedia,” *Chronicle Review of Higher Education*, February 12, 2012. Available at <http://chronicle.com/article/The-Undue-Weight-of-Truth-on/130704/>. Last checked May 28, 2012.

(26) . See *The Colbert Report*, July 31, 2006. Available at <http://www.colbertnation.com/the-colbert-report-videos/72347/july-31-2006/the-word—wikiality>. Last checked May 28, 2012.

(27) . In an interview (Kamir and Niesyto 2011), Israeli Wikipedia developer Dor Kamir explains how the NPoV principle and the No Original Research (NOR) principle are sometimes at odds. For instance, in Hebrew there are several

optional names for the territories known in English as the West Bank and the Gaza Strip, and yet choosing a “neutral” or new name is impossible because it would violate the NOR principle.

(28) . The Wikimedia Foundation is a nonprofit charitable organization “dedicated to encouraging the growth, development and distribution of free multilingual content, and to providing the full content of these wiki-based projects to the public free of charge.” See <http://wikimediafoundation.org/wiki/Home>. Last checked May 28, 2012. The board of trustees has the power to direct the activities of the foundation and also has the authority to amend the corporate bylaws. At full membership, the board has eighteen trustees, including one seat designated for Jimmy Wales.

(29) . Wikipedia’s Mediation Committee (MedCom) is “a panel of editors who resolve disputes about the content of Wikipedia articles by providing formal mediation.” It was established in January 2004, with the Arbitration Committee, and it is the “the last stage of formal content-dispute resolution on the English Wikipedia.” See [http://en.wikipedia.org/wiki/Wikipedia:Mediation\\_Committee](http://en.wikipedia.org/wiki/Wikipedia:Mediation_Committee). Last checked May 28, 2012.

(30) . See Wikipedia Mediation Committee and Mediation Policy. Available at [http://en.wikipedia.org/wiki/Wikipedia:Mediation\\_Committee/Policy](http://en.wikipedia.org/wiki/Wikipedia:Mediation_Committee/Policy). Last checked May 28, 2012.

(31) . For the Wikipedia Arbitration Committee/Policy. Available at [http://en.wikipedia.org/wiki/Wikipedia:Arbitration\\_policy#Admissibility\\_of\\_evidence](http://en.wikipedia.org/wiki/Wikipedia:Arbitration_policy#Admissibility_of_evidence). Last checked May 28, 2012.

(32) . See Information about Facebook’s Community Pages. Available at <http://www.facebook.com/help/?page=168393039888715>. Last checked May 28, 2012.

(33) . See Google Cache, 2007, a blog by Russ Jones, an Internet search-engine optimization specialist, presenting himself as a “Google watcher.” Available at <http://www.thegooglecache.com/white-hat-seo/966-of-wikipedia-pages-rank-in-googles-top-10/>. See also “Wikipedia Traffic, Mostly from Google” article featured on the Softmedia Blog, May 15, 2008, <http://news.softpedia.com/news/Wikipedia-Traffic-Mostly-from-Google-85703.shtml>. Last checked December 14, 2011.

(34) . See “Wikipedia Wins the Google Lottery—but Why?” *Guardian*, Technology Blog, February 18, 2010. Available at <http://www.guardian.co.uk/technology/blog/2010/feb/18/wikipedia-google>. Last checked December 14, 2011.